



Robert Greene Sterne
Edward J. Kessler
Jorge A. Goldstein
David K.S. Cornwell
Robert W. Esmond
Tracy-Gene G. Durkin
Michele A. Cimballa
Michael B. Ray
Robert E. Sokohl
Eric K. Steffe
Michael Q. Lee
Steven R. Ludwig
John M. Covert
Linda E. Alcorn
Robert C. Millonig
Lawrence B. Bugalsky
Donald J. Featherstone
Michael V. Messinger

Judith U. Kim
Timothy J. Shea, Jr.
Patrick E. Garrett
Heidi L. Kraus
Edward W. Yee
Albert L. Ferro*
Donald R. Banowitz
Peter A. Jackman
Molly A. McCall
Teresa U. Medler
Jeffrey S. Weaver
Kendrick P. Patterson
Vincent L. Capuano
Eldora Ellison Floyd
Thomas C. Fiala
Brian J. Del Buono
Virgil Lee Beaton
Kimberly N. Reddick

Theodore A. Wood
Elizabeth J. Haanes
Joseph S. Ostroff
Frank R. Cottingham
Christine M. Lhulier
Rae Lynn Prengaman
Jane Shershenovich*
Lawrence J. Carroll*
George S. Bardmesser
Daniel A. Klein*
Jason D. Eisenberg
Michael D. Specht
Andrea J. Karmage
Tracy L. Muller*
LuAnne M. Yuricek*
John J. Figueroa
Ann E. Summerfield
Tiera S. Coston*

Aric W. Ledford*
Registered Patent Agents*
Karen R. Markowicz
Nancy J. Leith
Helene C. Carlson
Gaby L. Longworth
Matthew J. Dowd
Aaron L. Schwartz
Mary B. Tung
Katrina Y. Pei Quach
Bryan L. Skelton
Robert A. Schwartzman
Timothy A. Doyle
Jennifer R. Mahalingappa
Teresa A. Colella
Jeffrey S. Lundgren

Victoria S. Rutherford
Eric D. Hayes

Of Counsel
Kenneth C. Bass III
Evan R. Smith

*Admitted only in Maryland
*Admitted only in Virginia
•Practice Limited to
Federal Agencies

May 5, 2004

WRITER'S DIRECT NUMBER:
(202) 772-8629
INTERNET ADDRESS:
DONF@SKGF.COM

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Art Unit 2632

Re: U.S. Utility Patent Application
Application No. 10/674,071; Filed: September 30, 2003
For: **Applications of Nano-Enabled Large Area Macroelectronics
Substrates Incorporating Nanowires and Nanowire Composites**
Inventors: EMPEDOCLES *et al.*
Our Ref: 2132.0070002/DJF/TAD

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Information Disclosure Statement;
2. Form PTO-1449 (1) page with 4 accompanying documents;
3. Supplemental Application Data Sheet; and
4. Return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
May 5, 2004
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Donald J. Featherstone
Attorney for Applicants
Registration No. 33,876

DJF/slw
Enclosures

259996_1.DOC

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

EMPEDOCLES *et al.*

Appl. No.: 10/674,071

Filed: September 30, 2003

For: **Applications of Nano-Enabled
Large Area Macroelectronic
Substrates Incorporating
Nanowires and Nanowire
Composites**

Confirmation No.: 1212

Art Unit: 2632

Examiner: To Be Assigned

Atty. Docket: 2132.0070002/DJF/TAD

Information Disclosure Statement

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.



This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- ☒ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.
- ☐ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
 - ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart

foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

☐ c. Attached is our PTO-2038 Credit Card Payment Form in the amount of \$_____ in payment of the fee under 37 C.F.R. § 1.17(p).

☐ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of \$_____ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:

☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- ☐ 6. A concise explanation of the relevance of the non-English language document(s) appears below:
- ☒ 7. Copies of documents AN1, AO1, AP1, and AQ1 are submitted herewith.
- ☐ 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).
- ☒ 9. In accordance with 1276 OG 55, copies of U.S. patent application publications AA1, AB1, AC1 are not enclosed because this application was filed after June 30, 2003.

- ☐ 10. It is expected that the examiner will review the prosecution and cited art in the parent application no(s). _____ in accordance with MPEP 2001.06(b), and indicate in the next communication from the office that the art cited in the earlier prosecution history has been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Donald J. Featherstone
Attorney for Applicants
Registration No. 33,876

Date: 5/5/04

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

257164_1.DOC

FORM PTO-1449

ATTY. DOCKET NO.
2132.0070002APPLICATION NO.
10/674,071

INFORMATION DISCLOSURE STATEMENT

INVENTORS
EMPEDOCLES *et al.*FILING DATE
September 30, 2003ART UNIT
2632

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA1	2001/0054709 A1	12/2001	Heath <i>et al.</i>			
	AB1	2002/0130311 A1	09/2002	Lieber <i>et al.</i>			
	AC1	2002/0130353 A1	09/2002	Lieber <i>et al.</i>			
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	1	Chung, S.-W. <i>et al.</i> , "Silicon nanowire devices," <i>Applied Physics Letters</i> , Vol. 76, No. 15, pp. 2068-2070 (April 10, 2000).
	AO	1	Duan, X. <i>et al.</i> , "High-performance thin-film transistors using semiconductor nanowires and nanoribbons," <i>Nature</i> , Vol. 425, pp. 274-278 (September 18, 2003).
	AP	1	Tans, S.J. <i>et al.</i> , "Room-temperature transistor based on a single carbon nanotube," <i>Nature</i> , Vol. 393, pp. 49-52 (May 7, 1998).
	AQ	1	Yamada, T., "Analysis of submicron carbon nanotube field-effect transistors," <i>Applied Physics Letters</i> , Vol. 76, No. 5, pp. 628-630 (January 31, 2000).

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.